

CLAIMS

1. A rate adaptive system for optical communication networks comprising:

a plurality of optical transceivers capable of transmitting and receiving optical signals at a plurality of rates,

an optical fibre linked to said optical transceivers,

wherein said system is configured to cause said optical transceivers to transmit and receive optical signals at an initial rate and to adapt said initial rate based upon an error condition.

2. A system as claimed in Claim 1, wherein said error condition is a failure to synchronise a received signal.

3. A system as claimed in Claim 1 or 2, wherein said system is further configured to calculate an error coefficient based on said received signals, and said error condition is said error coefficient exceeding a predefined range.

4. A system as claimed in any preceding Claim, wherein said rate is lowered according to predefined percentages of said initial rate in response to said error condition.

5. A system as claimed in Claim 4, wherein said percentages are 75, 50, and or 25 percent of said initial rate.

6. A system as claimed in any preceding Claim, wherein said initial rate is 10 Gb/s.

7. A system as claimed in any preceding Claim, wherein said system is configured to operate in an optical Ethernet network.

8. A system according to any preceding Claim, wherein said system is further configured to notify a network operator in the event of said error condition.

9. A rate adaptive method for operating an optical communication network, the method comprising the step of:

transmitting data at an initial rate,  
receiving said data,  
evaluating said data to determine if an error condition exists, and  
adapting said rate based upon said evaluation.

10. A method according to Claim 9, wherein said step of adapting said rate comprises lowering said initial rate according to predefined percentages of said initial rate in response to said error condition.

11. A method according to Claim 10, wherein said method comprises the further step of notifying a network operator in the event of said error condition.

12. An optical transceiver module for a rate adaptive system for optical communication networks comprising:

means for transmitting an optical signal via an optical fibre at a plurality of rates,

means for receiving an optical signal transmitted at a plurality of rates,

means for determining an error condition, and

means for adapting the optical signal transmission rate based upon the error condition.

13. A rate adaptive method for operating an optical communication network, the method comprising the step of:

- transmitting test signals at an initial rate,
- receiving said test signals,
- evaluating said test signals to determine if an error condition exists,
- and adapting said rate based upon said evaluation.